

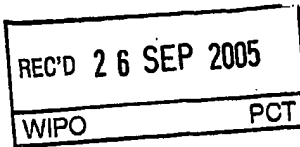
PATENT COOPERATION TREATY


PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference L/2BD29/LB/2		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/007606		International filing date (day/month/year) 08.07.2004		Priority date (day/month/year) 08.07.2003
International Patent Classification (IPC) or national classification and IPC C12N15/00				
Applicant UMC UTRECHT HOLDING B.V. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 10 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 7 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 01.02.2005		Date of completion of this report 26.09.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Montero Lopez, B Telephone No. +31 70 340-3739		



**INTERNATIONAL PRELIMINARY REPORT
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-56 as originally filed

Claims, Numbers

1-49 filed with telefax on 11.08.2005

Drawings, Sheets

1/23-23/23 as originally filed

☒ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
☒ claims Nos. 40-42 with respect to industrial applicability

because:

- ☒ the said international application, or the said claims Nos. 40-42 with respect to industrial applicability relate to the following subject matter which does not require an international preliminary examination (specify):

see separate sheet

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos.
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form	<input type="checkbox"/> has not been furnished
	<input type="checkbox"/> does not comply with the standard
the computer readable form	<input type="checkbox"/> has not been furnished
	<input type="checkbox"/> does not comply with the standard

- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See separate sheet for further details

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-49
Inventive step (IS)	Yes: Claims	
	No: Claims	1-49
Industrial applicability (IA)	Yes: Claims	1-39, 43-49
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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Supplemental Box relating to Sequence Listing

Continuation of Box I, item 2:

1. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this report has been established on the basis of:
 - a. type of material:
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☒ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in computer readable form
 - ☒ furnished subsequently to this Authority for the purposes of search and/or examination
 - ☒ received by this Authority as an amendment on
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional observations, if necessary:

see separate sheet

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Re Item I

Basis of the report

1. Sequence listing pages 1-9 filed with the letter of 1.2.2005 do not form part of the application (Rule 13ter.1(f) PCT).

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. Claims 40-42 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1: EP-A-0 786 519 (HUMAN GENOME SCIENCES, INC.) 30 July 1997 (1997-07-30)
- D2: WO 94/06830 A (ALFA LAVAL AGRIC INT AB) 31 March 1994 (1994-03-31)
- D3: WO 02/094868 (CHIRON SPA) 28 November 2002 (2002-11-28)
- D4: MAKOTO KURODA ET AL: "Whole genome sequencing of meticillin-resistant *Staphylococcus aureus*" THE LANCET, vol. 357, 21 April 2001 (2001-04-21), pages 1225-1240, XP004246103
- D5: DATABASE UniProt [Online] 1 December 2001 (2001-12-01), "Hypothetical protein." XP002322488 retrieved from EBI accession no. UNIPROT:Q931M7 Database accession no. Q931M7_STAAM
- D6: DATABASE UniProt [Online] 1 June 2001 (2001-06-01), "Hypothetical protein SA1754." retrieved from EBI accession no. UNIPROT:Q99SU9 Database

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accession no. Q99SU9_STAAN

D7: DATABASE UniProt [Online] 1 June 2001 (2001-06-01), "Fibrinogen binding protein." retrieved from EBI accession no. UNIPROT:Q99UU9 Database
accession no. Q99UU9_STAAN

1. The application relates to Staphylococcus "Lectin pathway inhibitor" polypeptides and genes lpi (sequence SEQ ID NO:2 and 3), lpiB (SEQ ID NO:4 and 5) and lpiC (SEQ ID NO:6 and 7) isolated from Staphylococcus aureus strains Mu50 and N315.
2. The term "LPI activity" is not considered to limit the scope of the claim. An activity is considered inherent to the polypeptides of sequences SEQ ID Nos:3, 5 and 7 even if not specifically disclosed. On the other hand, the applicant has not disclosed any of the claimed variants or homologues having such activity.
3. Document D1 discloses Staphylococcus aureus polynucleotides and polypeptides, as well as diagnostic and therapeutic uses thereof, recombinant production and antibodies (see pages 2-26). Table 1 discloses contig 520 (SEQ ID NO:520) as the gene encoding fibrinogen binding protein. SEQ ID NO:520 shows 99.4% sequence identity to SEQ ID NO:4 and 83.2% with SEQ ID NO:6. In the light of D1, claims 1, and 5-49 are not novel and do not comply with the requirements of Article 33(2) PCT.
4. Document D2 discloses a Staphylococcus aureus fibrinogen binding protein showing 100% identity with SEQ ID NO:5 and its encoding polynucleotide which shows 100% identity with SEQ ID NO:4. The claimed embodiments and applications have been as well disclosed in the description pages 1-27. Claims 1 and 5-49 are therefore not novel and do not comply with the requirements of Article 33(2) PCT.
5. Document D3 discloses Staphylococcus aureus polynucleotides and polypeptides, as well as diagnostic and therapeutic uses thereof, recombinant production and antibodies (see pages 2-34). The sequences referred to in D3 have been published on the same date as D3 (28.11.2002) on <http://www.wipo.int/pct/en/sequences/listing.htm> and form part of the state of the art. The polypeptide of sequence SEQ ID NO:1328 shows 99% sequence identity with SEQ ID NO:3. The polypeptide of sequence SEQ ID NO:1102 shows 100%

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identity with SEQ ID NO:5. The polynucleotide of sequence SEQ ID NO:1327 shows 99% identity with SEQ ID NO:1 and 100% identity with SEQ ID NO:2. The polynucleotide of sequence SEQ ID NO:1101 shows 100% identity with SEQ ID NO:4. In the light of D3, claims 1-49 are not novel and do not comply with the requirements of Article 33(2) PCT.

6. Document D4 discloses the whole genome sequencing of *Staphylococcus aureus* strains N315 and Mu50. In the frame of this sequencing proteins identical to SEQ ID Nos: 3 and 5 have been identified in Documents D5, D6, and D7. Claims 22, 23 and 49 are therefore not novel and do not comply with the requirements of Article 33(2) PCT.

6.1. The embodiments relating to polynucleotides and antibodies of the claimed proteins constitute routine manipulations to the skilled person, and therefore, claims 1-21, 24, 27, 30, 33-39, 43-45 and 49 are not inventive and contravene Article 33(3) PCT.

7. For the assessment of the present claims 24-29, 31, 32, 34-37, 39 and 46 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
EP2004/003398	14/10/2004	31/3/2004	31/3/2003

Re Item VII